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**oodOPT: A semantics-based concurrency control framework for fully-replicated architecture.** (English) [Zbl 1013.68116](#)

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Summary: Concurrency control has always been one of the most important issues in the design of synchronous groupware systems with fully-replicated architecture. An ideal strategy should be able to support natural and flexible human-to-computer and human-to-human interactions while maintaining the consistency of the system. This paper summarizes previous researches on this topic and points out the deficiencies of the existing results. A novel semantics-based concurrency control framework, oodOPT, is proposed. The main idea of the framework is to resolve conflicts by utilizing semantics of the operations and the accessed data objects. With this approach, complexities in concurrency control are shifted completely from application developers to the framework. Conflicts among operations on objects with different semantics and the strategies resolving these conflicts are analyzed. After describing the algorithm in full detail, the discussion ends up with a comparison with other related work and some considerations for open problems.

**MSC:**

[68Q55](#) Semantics in the theory of computing

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**Keywords:**

[concurrency control](#); [synchronous groupware systems](#)

**Software:**

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**References:**

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